

Ideation – Conductive Touch Music Player Toy

The touch sensing could be achieved by incorporating a conductive material into the device such as copper or aluminum foil. There are commercially available breakout boards that could be used for doing the touch sensing, by soldering a portion of the conductive material (e.g. copper foil) to the sensor (<https://www.adafruit.com/product/1374>)

Using conductive 3D printed filament to print the actual device could be an option as well.

There are some microcontrollers (e.g. Gemma M0 <https://www.adafruit.com/product/3501>) that have capacitive sensing built right in.

This Adafruit tutorial would provide a good starting point, it is a 3D printed unicorn horn with lights that change color when touched:

<https://learn.adafruit.com/capacitive-touch-unicorn-horn/introduction>

It's unclear whether the device itself would play music or if the music would come out of a secondary device.

A microcontroller with Wifi or Bluetooth could be used to trigger music from a secondary device such as a smartphone.

A small speaker or sound indicator could be incorporated into the device and used to play a series of tones.

Battery operated white-noise player that fits in a coffee cup:

<https://learn.adafruit.com/cup-o-sound>

There are also small modules that can store MP3's or wav files on SD cards and play them through a speaker that are controllable by a microcontroller.

e.g. <https://www.adafruit.com/product/2220>

An accelerometer/gyro could also provide for different ways of activating the device (e.g. orientation, shaking)

Vibration-activated sound:

<https://learn.adafruit.com/shake-up-a-gift-box/circuit-diagram>

Mini-Speaker:

<https://www.adafruit.com/product/1898>

Accelerometer-based Sound:

<https://learn.adafruit.com/talking-d20-20-sided-gaming-die>

Option A

Amplifier - \$3.95

<https://www.adafruit.com/product/2130>

3" 8 Ohm Speaker - \$1.95

<https://www.adafruit.com/product/258>

Sound FX Board - \$24.95

<https://www.adafruit.com/product/2220>

Battery Backpack Connection - \$4.95

<https://www.adafruit.com/product/2124>

Lipo Battery - \$12.95

<https://www.adafruit.com/product/258>

Touch Sensor -

<https://www.adafruit.com/product/1374>

Option B

3" 8 Ohm Speaker - \$1.95

<https://www.adafruit.com/product/258>

Adafruit Sound Board - \$29.95

<https://www.adafruit.com/product/2217>

Battery Pack

Touch Sensor -

<https://www.adafruit.com/product/1374>

Option C

Adafruit Sound Board - \$29.95

<https://www.adafruit.com/product/2217>

Trinket M0

Battery Backpack Connection - \$4.95

<https://www.adafruit.com/product/2124>

Lipo Battery - \$12.95

<https://www.adafruit.com/product/258>

Other Possible Components:

There are very low cost (around \$2.00 US) sound modules available from seller TxHang Electronics on Ebay. As you can imagine sound quality isn't the greatest, but they are good for capturing and playing back small sound snippets.

URL:

https://www.ebay.ca/sch/m.html?ssn=alice1101983&from=R40&trksid=p2499338.m570.l1313.TR1.TRC0.A0.H1.Xsound+playback+module.TRS0&_nkw=sound+playback+module&_sacat=0

Additional Parts

USB Cable

Mp3 to Ogg Converter - Online